

AMENDMENTS TO CLAIMS:

The listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1-13. (Cancelled)

14. (Currently amended) A method of correcting blur in a motion blurred image comprising:

estimating the direction of blur in said motion blurred image based on edge response of said motion blurred image over a set of discrete directions extending through said motion blurred image and over subgroups of said discrete directions;

estimating the extent of blur in said motion blurred image;

generating an initial guess image based on said motion blurred image;

blurring the guess image as a function of said estimated blur direction and blur extent;

comparing the blurred guess image with the motion blurred image to generate an error image;

blurring the error image; and

combining the error image and the initial guess image thereby to update the guess image and correct for blur in the guess image; and

further comprising weighting said error image prior to said combining to inhibit blur correction from occurring in areas not requiring blur correction;

wherein said weighting is a function of the blur direction;

wherein said weighting is an estimate of the edge magnitude of said guess image in said blur direction;

wherein said blurring, comparing, blurring, weighting, and combining are performed iteratively;

wherein said set of discrete directions includes N discrete directions, said discrete directions being angularly spaced over the angular space of said motion blurred image between 0 and 180 degrees;

wherein said discrete directions are equi-angularly spaced and wherein N is an even number;

wherein during said blur direction estimating the edge response over a plurality of subgroup combinations of discrete directions is determined and compared with the edge response over the set of discrete directions, each subgroup combination partitioning said set of discrete directions into a pair of quadrants; with discrete directions in at least one of said quadrants being consecutive; and

wherein said blur direction estimating further comprises:

for each subgroup combination, determining the deviation between the edge response of said motion blurred image over said set of discrete directions and the edge responses of said motion blurred image over the discrete directions in each of said quadrants;

for the subgroup combination yielding the highest deviation declaring the direction that bisects the one quadrant as the blur direction when the edge response over the discrete directions in the one quadrant is less than the edge response over the discrete directions in the other quadrant; and

otherwise declaring the direction normal to the direction that bisects the one quadrant as the blur direction.

15-17. (Cancelled)

18. (Currently amended) A method of correcting blur in a motion blurred image comprising:

estimating the direction of blur in said motion blurred image based on edge response of said motion blurred image over a set of discrete directions extending through said motion blurred image and over subgroups of said discrete directions;

estimating the extent of blur in said motion blurred image;

generating an initial guess image based on said motion blurred image;

blurring the guess image as a function of said estimated blur direction and blur extent;

comparing the blurred guess image with the motion blurred image to generate an error image;

blurring the error image; and

combining the error image and the initial guess image thereby to update the guess image and correct for blur in the guess image;

wherein said set of discrete directions includes N discrete directions, said discrete directions being angularly spaced over the angular space of said motion blurred image between 0 and 180 degrees;

wherein said discrete directions are equi-angularly spaced and wherein N is an even number;

wherein during said blur direction estimating the edge response over a plurality of subgroup combinations of discrete directions is determined and compared with the edge response over the set of discrete directions, each subgroup combination partitioning said set of discrete directions into a pair of quadrants, with discrete directions in at least one of said quadrants being consecutive; and

~~The method of claim 17~~ wherein said blur direction estimating further comprises:

for each subgroup combination, determining the deviation between the edge response of said motion blurred image over said set of discrete directions and the edge responses of said motion blurred image over the discrete directions in each of said quadrants;

for the subgroup combination yielding the highest deviation, declaring the direction that bisects the one quadrant as the blur direction when the edge response over the discrete directions in the one quadrant is less than the edge response over the discrete directions in the other quadrant; and

otherwise declaring the direction normal to the direction that bisects the one quadrant as the blur direction.

19-21. (Cancelled)

22. (Currently amended) The method of claim ~~21~~14 wherein the edge magnitude is estimated using a high-pass filter.

23. (Currently amended) The method of claim ~~21~~14 wherein said initial guess image is said motion blurred image.

24. (Cancelled)

25. (Currently amended) The method of claim ~~24~~14 wherein said blurring, comparing, blurring, weighting, and combining are performed iteratively a threshold number of times.

26. **(Currently amended)** The method of claim ~~24~~14 wherein said blurring, comparing, blurring, weighting, and combining are performed iteratively until the magnitude of the error image falls below a threshold level.

27. **(Currently amended)** The method of claim ~~24~~14 wherein said blurring, comparing, blurring, weighting, and combining are performed iteratively until the error image fails to change by more than a threshold amount between successive iterations.

28. **(Currently amended)** The method of claim ~~24~~14 wherein prior to said generating said blur extent is compared with a threshold blur extent level, said generating, blurring, comparing, blurring, weighting and combining being performed only when the estimate of the motion blur extent is greater than said threshold blur extent level.

29-32. **(Cancelled)**

33. **(Currently amended)** The method of claim ~~19~~14, wherein said blur extent is estimated using a correlation based method.

34. **(Currently amended)** The method of claim ~~21~~14, wherein said blur extent is estimated using a correlation based method.

35. **(Currently amended)** The method of claim ~~32~~14, wherein said blur extent is estimated using a correlation based method.

36-48. **(Cancelled)**